NEW MEXICO ENVIRONMENT DEPARTMENT
SURFACE WATER QUALITY BUREAU

PRELIMINARY DECISION ON THE EFFECTS OF RENEWAL OF THE SANTA ROSA WASTEWATER TREATMENT PLANT NPDES PERMIT ON ANTIDEGRADATION IN EL RITO CREEK AND THE PECOS RIVER

The New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) is in receipt of the City of Santa Rosa's National Pollutant Discharge Elimination System (NPDES) permit application (submitted to the U.S. Environmental Protection Agency [USEPA] in November 2000) and draft NPDES permit (public noticed January 22, 2002). The application proposes to expand the municipal wastewater treatment plant (WWTP) from the previously permitted design flow of 0.35 million gallons per day (MGD) to 0.75 MGD. The SWQB is currently examining the application and draft permit for the purpose of Clean Water Act Section 401 Water Quality Certification. The state certification is intended to insure that the USEPA federal NPDES permit will protect New Mexico water quality standards and comply with applicable state laws.

As part of the state certification process, the SWQB must evaluate the potential impacts on water quality in the effluent receiving waters of El Rito Creek and the Pecos River that may result from the increase in pollutant loads from the treatment plant expansion. The state requirement that has prompted this review of Santa Rosa's plant expansion is the New Mexico Water Quality Control Commission's (WQCC) Antidegradation Policy and Implementation Plan, Paragraph 2 of Subsection A of 20.6.4.8 in the *State of New Mexico Standards for Interstate and Intrastate Surface Waters 20.6.4 NMAC*, as follows:

> *Where the quality of a surface water of the state exceeds levels necessary to support the propagation of fish, shellfish, and wildlife, and recreation in and on the water, that quality shall be maintained and protected unless the commission finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the state's continuing planning process, that allowing lower water quality is necessary to accommodate important economic and social development in the area in which the water is located. In allowing such degradation or lower water quality, the state shall assure water quality adequate to protect existing uses fully. Further, the state shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost effective and reasonable BMPs for nonpoint source control. Additionally, the state shall encourage the use of watershed planning as a further means to protect surface waters of the state.*

Summary of Proposed Effluent Limits in Draft NPDES Permit

The USEPA proposes to renew the permit for design flows of 0.454 MGD (Final I Effluent Limits) and 0.75 MGD (Final II Effluent Limits). The previously permitted design flow was 0.350 MGD. The draft permit represents a 30% (Final I at 114 lbs/day) and 114% (Final II at 188 lbs/day) increase above the previous permit design flow and associated loading limits for

Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD). The current loading limit for TSS and BOD is 87.6 lbs/day. Technology based concentration limits are proposed for TSS and BOD according to Title 40 of the Code of Federal Regulations Part 133.102. The effluent limit in the draft permit for fecal coliform bacteria is the same as in the previous permit at 500 colonies/100 ml. Based on this limit, the current calculated load is 0.663×10^{10} cfu/day. In the proposed permit, fecal loads would increase to 0.860×10^{10} cfu/day (Final I) and 1.420×10^{10} cfu/day (Final II) due to the increased flow.

The effluent limits in the draft permit for pH and total residual chlorine comply with state water quality standards as described in 20.6.4 NMAC and the New Mexico Water Quality Management Plan. Total ammonia was present in the effluent at levels that indicated a reasonable potential to exceed applicable water quality standards. Therefore, the USEPA is proposing an effluent limit for ammonia in the form of a chronic Whole Effluent Toxicity (WET) test using fathead minnows as the test organism. The previous permit did not require an ammonia limit or WET tests.

The primary focus of this antidegradation review is the lower water quality that would result from the increase in TSS, BOD, and fecal coliform loading to the receiving streams. The antidegradation policy allows lower water quality if, among other factors, such degradation is necessary to accommodate important economic and social development in the area of the receiving streams.

Description of Receiving Streams

The Santa Rosa WWTP discharges into El Rito Creek in Segment 20.6.4.212 NMAC and thence to the Pecos River in Segment 20.6.4.211 NMAC. The Pecos River is located 500' below the WWTP outfall in El Rito Creek. Both receiving streams are considered "Tier II" waters for purposes of antidegradation according to Paragraph 2 of Subsection A of 20.6.4.8 NMAC cited above. The water quality in Tier II streams exceeds (i.e., is better than) the levels that are necessary to support existing uses. Existing uses in El Rito Creek are: irrigation, coldwater fishery, livestock watering, wildlife habitat, and primary contact. Existing uses in the Pecos River are: fish culture, irrigation, limited warmwater fishery, livestock watering, wildlife habitat, and secondary contact.

Proposed Facility Expansion/Upgrade and Plans to Minimize Impacts to Receiving Streams

Santa Rosa intends to accommodate increasing population growth for a 20-year period, provide irrigation to recreation lands, and comply with federal NPDES and NM Ground Water Quality Protection permits by expanding capacity and installing additional treatment to the existing facility. Santa Rosa has secured financing for this effort through the USDA Rural Utilities Service (RUS) to construct an effluent reuse line, an additional aerated lagoon (0.300 MGD), and a filtration unit (cloth polishing filter type). Final engineering designs for the upgrade must still be submitted to the NMED's Construction Programs Bureau for review before funds can be released. The city plans to reuse effluent for irrigation purposes 200 days/year (7 months) at a rate of 0.250 MGD. During the non-irrigation season (5 months), the entire effluent flow generated by the facility will be discharged into the receiving streams. There are currently no

plans to store effluent during the non-irrigation season. The existing facility discharged an average monthly flow of approximately 0.292 to 0.345 MGD from July 2001 through June 2002.

Antidegradation Review Process

During the review process, SWQB staff met with various groups and persons to gain an understanding of antidegradation as it related to the Santa Rosa permit renewal and facility expansion. The following is a summary of such contacts and discussions:

- City of Santa Rosa staff and elected officials – Explained the antidegradation review process via meetings and a presentation to the city council. Requested information from the city and received a description of the important social or economic activities and development in the Santa Rosa area that may be beneficially or adversely impacted by allowing the increased effluent discharge from the proposed facility expansion.

- Santa Rosa City Engineer – Discussed various minor modifications to the proposed facility upgrade plan that are feasible and would meet current permit load limits for TSS and BOD. Effluent reuse volumes could also be increased if additional recreation lands are brought into the city irrigation system. Such changes could be financed by RUS as an addition to the funds already secured. Because the modifications would be prompted by regulatory requirements (i.e., antidegradation), it is possible that it could be funded by a grant. An alternative of total storage with no discharge to surface waters was also discussed but costs would be higher than the suggested changes to the upgrade plan.

- USEPA staff from Region 6 (Dallas, TX) and Headquarters (Washington, D.C.), NMED Construction Programs Bureau, NM Department of Finance and Administration, and the University of New Mexico Environmental Finance Center (Albuquerque) - Discussed the socioeconomic issues involved in determining whether a permittee has the ability to pay for treatment options that will avoid degradation to water quality.

Antidegradation Decision

After review of all facts currently available to the SWQB, including those documented in the review process described above, the SWQB concludes that it has not been demonstrated that allowing lower water quality (degradation) is necessary, in this case, to accommodate important economic and social development. Alternative treatment options are available to the permittee to prevent an increase in TSS, BOD and fecal coliform loading to the receiving streams and avoid degradation. Operation and maintenance practices can be instituted to improve disinfection rates and reduce fecal coliforms in the discharge. Wastewater storage options have yet to be explored in an effort to reduce loading and manage discharge volumes during periods when effluent reuse may not be possible.

Accordingly, the antidegradation decision will be implemented by the state water quality certification of the NPDES permit, as follows:

- 30-Day average discharge limitation of 87.6 lbs/day for TSS for Final I & Final II phase

- 30-Day average discharge limitation of 87.6 lbs/day for BOD for Final I & Final II phase

- 30-day Average and 7-Day Average discharge limitation of 388 colonies/100ml for Final I phase (design flow 0.454 MGD)

- 30-day Average and 7-Day Average discharge limitation of 233 colonies/100ml for Final II phase (design flow 0.75 MGD)

Public Participation

Intergovernmental coordination and public participation provisions of the state's continuing planning process will be involved in the agency decision making process through a public meeting, making the preliminary decision document readily available to the public, and consideration of comments from the permittee and the public. Findings from the public participation process will be considered in developing the final decision.